

## 2. HEALTH EFFECTS

**Table 2-4. Levels of Significant Exposure to Acetone – Dermal**

Figure key <sup>a</sup>	Species (strain) No./group	Exposure parameters	Doses	Parameters monitored	Endpoint	NOAEL	Less serious LOAEL	Serious LOAEL	Effects
<b>ACUTE EXPOSURE</b>									
<b>Lupulescu and Birmingham 1975</b>									
1	Human 6 NR	1 day 90 minutes/day	1 mL	BI	Dermal	1			Decreased protein synthesis
<b>Lupulescu et al. 1972, 1973</b>									
2	Human 6 M	1 day 30 or 90 minutes/day	1 mL	HP CS	Dermal	1			Histological and ultrastructural degenerative changes in epidermis
<b>Matsushita et al. 1969a</b>									
3	Human 5 M	1 day 6 hours/day	0, 100, 250, 500, 1,000 ppm	CS UR HE	Dermal	100			Eye irritation
<b>Nelson et al. 1943</b>									
4	Human 10 B	1 day 3– 5 minutes/day	NS		Ocular	200	500		Eye irritation
<b>Ross 1973</b>									
5	Human 8 M	1 day 2 minutes– 4 hours/day	12,000 ppm	CS	Dermal	12,000			Eye irritation
<b>Sallee and Sappington 1949</b>									
6	Human NS	4–8 hours/day (occupational)	300– 3,000 ppm	CS	Dermal	2,000			Mild eye irritation
<b>Iversen et al. 1988</b>									
7	Mouse NR F	Once	0, 0.2 mL	BI	Dermal	0.2			Slight increase in DNA synthesis in skin
<b>Specht et al. 1939</b>									
8	Guinea pig 10 F	1 day 25 minutes– 23.4 hours/day	21,800 ppm	GN CS	Dermal	21,800			Lacrimation

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<b>Bolkova and Cejkova 1983</b>									
9	Rabbit NR	1 day 1 minute/day	20 drops 96% acetone	BI	Dermal		20		Reversible corneal burns
<b>Carpenter and Smyth 1946</b>									
10	Rabbit NR	Once	0.005– 0.02 mL	HP	Ocular		0.01		Severe eye necrosis
<b>Larson et al. 1956</b>									
11	Rabbit 5 M	1 day 3 minutes/day	4 ppm	OW	Dermal	4			Edema of eye mucous membrane
<b>Smyth et al. 1962</b>									
12	Rabbit NR	Once	0.005 mL	CS	Ocular		0.01		Severe corneal burn
<b>Smyth et al. 1962</b>									
13	Rabbit 5 NR	Once	0.01 mL	CS	Ocular	0.01			
<b>INTERMEDIATE EXPOSURE</b>									
<b>Iversen et al. 1981</b>									
14	Mouse 25 M, 25 F	18 weeks 2 times/week	0.1 mL	HP BI	Dermal	0.1			Moderate hyperplasia of epidermis
<b>Rengstorff et al. 1972</b>									
15	Guinea pig 12 B	3 weeks 3 days/week	0.5 mL	OP	Dermal		0.5		Cataracts
<b>Taylor et al. 1993</b>									
16	Guinea pig 15 NS	6 months 5 days/week 1 time/day	0.5 mL	BW CS OP	Dermal Other noncancer	0.5 0.5			Mild erythema Transient weight loss of 60 g
<b>Pe'er et al. 1992</b>									
17	Rabbit 17 NS	12–16 weeks 1 time/week	10 µL/week	HP CS	Dermal	10			Uveal melanocytic hyperplasia

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<b>Rengstorff et al. 1976</b>									
18	Rabbit 5 M, 5 F	3 weeks 3 days/week	0, 1.0 mL	OP	Dermal	1			
<b>CHRONIC EXPOSURE</b>									
19	Mouse 40 M	502 days 3 times/week	667 mg/kg	GN HP	Dermal	667	Dermatitis in 2/40, hyperplasia in 1/40, and hyperkeratosis in 1/40		

B = both sexes; BI = biochemical changes; Cardio = cardiovascular; CS = clinical signs; DNA = deoxyribonucleic acid; F = female(s); Gastro = gastrointestinal; GN = gross necropsy; HE = hematology; Hemato = hematological; HP = histopathological; LOAEL = lowest-observed-adverse-effect level; M = male(s); Musc/skel = musculoskeletal; NOAEL = no-observed-adverse-effect level; NR = not reported; NS = not specified; OP = ophthalmology; OW = organ weight; Repro = reproductive; Resp = respiratory; UR = urinalysis